VPDES PERMIT FACT SHEET ADDENDUM – MAJOR MODIFICATION

This document gives pertinent information concerning the modification of the VPDES permit VA0061646 for the Town of Surry Wastewater Treatment Facility (WWTF). This permit is being processed as a Minor, Municipal permit. The effluent limitations contained in this permit will maintain the Water Quality Standards of 9 VAC 25-260-00 et seq. The permit modification is intended for the inclusion of an additional flow tier and insertion of nutrient concentration limits based on proposed treatment works expansion and nutrient removal technology described in the Preliminary Engineering Report (PER) that was approved by the Department on January 24, 2014. *E. coli* and TRC limitations and monitoring requirements have also been updated in this permit action due to a newly installed alternative (ultraviolet light) disinfection system. Associated monitoring requirements, permit language and Special Conditions were modified or updated as necessary. This fact sheet addendum will only address the aspects of the permit or permit developments that are changing in this modification. The numbering schema in this Fact Sheet Addendum is consistent with the current Fact Sheet. SIC Code: 4952

4. Application for Modification Received: Date: 3/21/2014
Application Complete (includes Watershed Nutrient General Permit Application and Associated Fee): Date: 10/6/2014

Permit Drafted By:	Adam Eller	Date: 12/8/2014
Piedmont Regional Office		
Reviewed By:	Zack Oremland	Date: 12/9/2014
	Emilee Adamson	Date: 1/21/2015; 2/24/2015

Public Comment Period Dates: 4/1/2015 to 5/1/2015

5. Receiving Stream Name: Dark Swamp, Unnamed Tributary
River Mile: 2-XBA000.27
Basin: James River
Subbasin: Lower James River
Section: 1a
Class: III
Special Standards: None

7-Day, 10-Year Low Flow (7Q10):	0.0 MGD
1-Day, 10-Year Low Flow (1Q10):	0.0 MGD
30-Day, 5-Year Low Flow (30Q5):	0.0 MGD
30-Day, 10-Year Low Flow (30Q10):	0.0 MGD
Harmonic Mean Flow (HM):	0.0 MGD
Tidal?	NO
On 303(d) list?	NO

See **Attachment 2** for the 2014 Flow Frequency Memorandum

8. Permit Characterization:

( ) Issuance ( ) Reissuance (**X**) Modification
( ) Private ( ) Federal ( ) State (**X**) POTW ( ) PVOTW
( ) Possible Interstate Effect ( ) Interim Limits in Other Document

9. Facility Description:

Discharge Description of Proposed 0.099 MGD Treatment Works

OUTFALL NUMBER	DISCHARGE SOURCE	TREATMENT	DESIGN FLOW
001	Residential (75%) and commercial (25%)	Microscreen auger, primary clarification, sequencing batch reactor (SBR), secondary clarification, microfiltration, ultraviolet disinfection (chlorination/dechlorination available as backup disinfection), cascading aeration	0.099 MGD

The sewage treatment plant treats wastewater from approximately 500 connections, both residential and commercial, including offices and restaurants. Total population served is approximately 8,120. Connections are located within the Town of Surry limits and immediately outside of the Town boundary. Modifications to the treatment works will include design capacity expansion to 99,000 gallons per day (0.099 MGD), upgrading the existing wastewater treatment plant to include a new microscreen auger at the headworks, and the addition of a sequencing batch reactor (SBR) and tertiary filtration, which will be rated for 0.099 MGD. See **Attachment 1** for facility diagrams depicting the proposed facility upgrades.

16. Effluent Screening & Limitation Development:

Nutrients: The Town of Surry WWTF has proposed a facility expansion to 0.099 MGD. Expanding facilities discharging to the Chesapeake Bay are addressed by § 62.1-44.19:14.C.5 of the *Code of Virginia* as follows: *"...any owner or operator of a facility authorized by a Virginia Pollutant Discharge Elimination System permit to discharge 40,000 gallons or more per day, or an equivalent load, directly into tidal or nontidal waters (shall) secure general permit coverage by filing a registration statement with the Department at the time he makes application with the Department for a new discharge or expansion that is subject to an offset or technology-based requirement in § 62.1-44.19:15…"*

Nutrient loadings to the Chesapeake Bay Watershed are now limited under the General Permit for Total Nitrogen and Total Phosphorous Discharges and Nutrient Trading in the Chesapeake Bay Watershed in Virginia (9 VAC 25-820), which became effective on January 1, 2012 and was amended on November 21, 2012; the Town of Surry WWTF has obtained general permit coverage under Registration No. VAN040172. According to 9 VAC 25-820-30.A, the general permit shall control in lieu of conflicting or duplicative mass loading effluent limitations, monitoring or reporting requirements for total nitrogen (TN) and total phosphorus (TP) contained in individual VPDES permits for facilities covered by the general permit. Based on the referenced regulation, nutrient loading limitations and associated monitoring were not included in the individual permit. Compliance with the Nutrient Loading Allocations assigned to the Town of Surry WWTF in 9 VAC 25-820-70 is required by January 1st following the issuance of a CTO for the 0.099 MGD upgrades. In order to achieve compliance with the load allocations the Town of Surry WWTF's expansion will include biological nutrient removal (BNR) technology (See **Attachment 1**).

In accordance with 9 VAC 25-40-70, the board shall include technology-based effluent concentration limitations in the individual permit for any facility that has installed technology for the control of nitrogen and phosphorus whether by new construction, expansion, or upgrade. Such limitations shall be based upon the technology installed by the facility and shall be expressed as annual average concentrations. The overall modifications to the treatment works, as described in the Town of Surry WWTF's Preliminary Engineering Report (PER) submitted to the Department on December 17, 2013 and approved on January 24, 2014, shall be designed to meet annual average total nitrogen effluent concentration limitation of 8.0 mg/L and annual average total phosphorus effluent concentration limitation of 1.0 mg/L; these limitations are appropriate for the facility's proposed BNR technology (See **Attachment 1**). Per GM07-2008, the TN and TP concentration limitations for the 0.099 MGD facility will become effective January 1st following the year in which the CTO for the 0.099 MGD facility upgrade is issued.

Table 1.1 Basis for 0.099 MGD Effluent Limitations

PARAMETER	BASIS FOR LIMIT	DISCHARGE LIMITS			
		MONTHLY AVERAGE	WEEKLY AVERAGE	MINIMUM	MAXIMUM
pH	4, 5	NA	NA	6.0 s.u.	9.0 s.u.
$cBOD_5$	3, 6	10 mg/L	15 mg/L	NA	NA
Total Suspended Solids (TSS)	1, 3	10 mg/L	15 mg/L	NA	NA
Total Kjeldahl Nitrogen (TKN)	3, 6	3.0 mg/L	4.5 mg/L	NA	NA
Ammonia (as N)	2	1.72 mg/L	1.72 mg/L	NA	NA
Dissolved Oxygen (DO)	6	NA	NA	5.0 mg/L	NA
Total Recoverable Copper	2	3.8 µg/L	3.8 µg/L	NA	NA
Total Recoverable Zinc	2	37 µg/L	37 µg/L	NA	NA
Dissolved Sulfide	2	NL	NL	NA	NA
E. coli (N/100mL) (Geometric Mean)	4	126	NA	NA	NA
Total Nitrogen, Calendar Year Average	7	8.0 mg/L	NA	NA	NA
Total Phosphorous, Calendar Year Average	7	1.0 mg/L	NA	NA	NA
Total Nitrogen, Year-to-Date (mg/L)	7	NL	NA	NA	NA

Total Phosphorous, Year-to-Date (mg/L)	7	NL	NA	NA	NA
TRC*	2	0.0080 mg/L	0.0098 mg/L	NA	NA
(157) TRC contact tank*	3	NA	NA	1.0 mg/L	NA
(213) TRC contact tank*	3	NA	NA	0.60 mg/L	NA

NA = Not Applicable
NL = No Limit
* Applicable when chlorine is used for disinfection (see Part I.B of permit)

1. Stream Sanitation Memorandum (April 20, 1988; see **Attachment I** of the 2011 Fact Sheet)
2. Water Quality Based Limits
3. Best Engineering Judgment (BEJ)
4. Virginia Water Quality Standards
5. Federal Effluent Guidelines for Secondary Treatment (40 CFR 133.102)
6. Stream Sanitation Memorandum (July 25, 2014; see **Attachment 2)**
7. 9VAC25-40-70

pH:
9 VAC 25-260-50 of the VA Water Quality Standards outlines numerical criteria for pH in Class III waters between 6.0 S.U. and 9.0 S.U. 40 CFR 133.102 Secondary Treatment Regulation also states that: "The effluent values for pH shall be maintained within the limits of 6.0 to 9.0 unless the publicly owned treatment works demonstrates that: (1) Inorganic chemicals are not added to the waste stream as part of the treatment process; and (2) contributions from industrial sources do not cause the pH of the effluent to be less than 6.0 or greater than 9.0."

$cBOD_5$, DO and TKN:
The receiving stream cannot be accurately modeled using Regional Model 4.1; therefore, effluent limits from A.J. Anthony's March 9, 1987 memorandum "Advisory Notification of Effluent Limits for Swamp and Marsh Waters" were recommended in the 2014 Stream Sanitation Memorandum (see **Attachment 2**). The 2014 Stream Sanitation Memorandum suggested effluent limitations as follows: $cBOD_5$ = 10 mg/L; TKN = 3.0 mg/L; and, a minimum DO limit of 5.0 mg/L was recommended for the 0.099 MGD facility to protect the free-flowing portion of the stream. The aforementioned limitations are the same as $cBOD_5$, DO and TKN limitations for the existing 0.060 MGD facility.

TSS:
The 0.060 MGD facility's current TSS limitations of 10 mg/L (Monthly Average) and 15 mg/L (Weekly Average) are based on the 1988 Stream Sanitation Memorandum; these TSS effluent limitations are considered protective of the receiving stream and have been applied to the 0.099 MGD facility. Loading limitations have been adjusted to account for additional flow (see **Attachment 3** for TSS loading calculations).

Ammonia:
Facilities discharging treated domestic waste are known to discharge ammonia at an expected concentration of 9.00 mg/L. Per GM 00-2011, this datum was used to force an ammonia limitation for the 0.099 MGD facility. The resulting limitation calculated for the 0.099 MGD facility is less stringent than the current permit limit of 1.72 mg/L (Monthly & Weekly Average); therefore, the current ammonia limitation for the 0.060 MGD facility will

be applied to the 0.099 MGD facility (see **Attachment 3** of this Fact Sheet Addendum and **Attachment G** of the 2011 Fact Sheet for MSTRANTI WLAs and STATS.exe analysis of Ammonia). The TKN limitation of 3.0 mg/L is not protective of ammonia toxicity; therefore, both ammonia and TKN limitations apply.

Total Recoverable Copper:
The 0.060 MGD facility's Total Recoverable Copper limitations (3.8 µg/L Weekly Average; 3.8 µg/L Monthly Average) have been applied to the 0.099 MGD facility. These water quality-based limitations (WQBELs) were established in the 2006 permit and carried forward in the 2011 permit (see **Attachment J** of the 2011 Fact Sheet for the 2006 limitation development documents, which includes MSTRANTI and Stats.exe evaluations). The proposed flow expansion to 0.099 MGD does not affect water quality-based concentration limits when the receiving stream is comprised solely of effluent and no new effluent data is available for the 0.099 MGD facility as it has not been built; therefore, no further effluent limitation analysis for Total Recoverable Copper is needed at this time.

Total Recoverable Zinc:
The 0.060 MGD facility's Total Recoverable Zinc limitations (37 µg/L Weekly Average; 37 µg/L Monthly Average) have been applied to the 0.099 MGD facility. These WQBELs were established in the 2006 permit and carried forward in the 2011 permit (see **Attachment J** of the 2011 Fact Sheet). The proposed flow expansion to 0.099 MGD does not affect water quality-based concentration limits when the receiving stream is comprised solely of effluent and no new effluent data is available for the 0.099 MGD facility as it has not been built; therefore, no further effluent limitation analysis for Total Recoverable Zinc is needed at this time.

Dissolved Sulfide:
The existing 0.060 MGD facility's monitoring requirement (1/6 Months) for Dissolved Sulfide has been applied to the 0.099 MGD facility in order to continue the evaluation of the potential presence of hydrogen sulfide. The monitoring requirement was established for the 0.060 MGD facility in the 2011 permit, in accordance with VPDES Permit Manual guidance.

E. coli:
The Town of Surry WWTF was granted a CTO for an ultraviolet light (UV) disinfection system upgrade on April 22, 2014 (see **Attachment 5**). The UV system will serve as the primary disinfection method for the treatment works; however, chlorine disinfection will remain available as a backup disinfection method. Per Part I.B.2 of the 2011 permit and in accordance with GM14-2003, the existing 0.06 MGD facility shall monitor *E. coli* twice per week by grab sample between 10 a.m. and 4 p.m. when bacteria is controlled by UV disinfection. The proposed 0.099 MGD facility shall also monitor *E. coli* twice per week by grab sample between 10 a.m. and 4 p.m. when bacteria is controlled by UV disinfection per GM14-2003. The *E. coli* limit is the same as the current limit for the 0.060 facility (when alternative disinfection is used) and no compliance schedule is allowed for *E. coli* per GM14-2003.

TRC:
Chlorine is a toxic pollutant that will be purposefully introduced into the wastewater when chlorine disinfection is used. Consequently, a reasonable potential analysis is not necessary to establish the need for a limitation. Per GM00-2011, a chlorine limitation was forced using a datum of 20,000 µg/L. The resulting limitation calculated for the 0.099 MGD facility using Stats.exe was less stringent than the TRC limit in the current permit for the 0.060 MGD facility; therefore, the current TRC limitations of 0.0080 mg/L (Monthly Average) and 0.0098 mg/L (Weekly Average) will be carried forward and applied to the

0.099 MGD facility (see **Attachment 3** of this Fact Sheet Addendum and **Attachment G** of the 2011 Fact Sheet for MSTRANTI WLAs and STATS.exe analysis of TRC).

18. Antibacksliding Statement:

All limitations established in this permit modification are at least as stringent as the limitations in the 2011 permit.

19. Compliance Schedules: None

20. Special Conditions:

Part I.C.3: CTC, CTO Requirement
Rationale: Required by Code of Virginia § 62.1-44.19; Sewage Collection and Treatment Regulations, 9 VAC 25-790.

Part I.C.4: O&M Manual Requirement
Rationale: Required by Code of Virginia § 62.1-44.19; Sewage Collection and Treatment Regulations, 9 VAC 25-790; VPDES Permit Regulation, 9 VAC 25-31-190 E.

Part I.C.5: Licensed Operator Requirement
Rationale: The VPDES Permit Regulation, 9 VAC 25-31-200 C and the Code of Virginia § 54.1-2300 et seq., Board for Waterworks and Wastewater Works Operators and Onsite Sewage System Professionals Regulations (18 VAC 160-20-10 et seq.), require licensure of operators.

Part I.C.6: Reliability Class
Rationale: Required by Sewage Collection and Treatment Regulations, 9VAC25-790 for all municipal facilities.

Part I.C.10: Compliance Reporting
Rationale: Authorized by VPDES Permit Regulation, 9 VAC 25-31-190 J 4 and 220 I. This condition is necessary when pollutants are monitored by the permittee and a maximum level of quantification and/or a specific analytical method is required in order to assess compliance with a permit limit or to compare effluent quality with a numeric criterion. The condition also establishes protocols for calculation of reported values.

Part I.C.11: Closure Plan
Rationale: This condition establishes the requirement to submit a closure plan for the treatment works if the treatment facility is being replaced or is expected to close. This is necessary to ensure treatment works are properly closed so that the risk of untreated waste water discharge, spills, leaks and exposure to raw materials is eliminated and water quality maintained. Section 62.1-44.21 requires every owner to furnish when requested plans, specification, and other pertinent information as may be necessary to determine the effect of the wastes from his discharge on the quality of state waters, or such other information as may be necessary to accomplish the purpose of the State Water Control Law.

Part I.C.14: Nutrient Reporting Calculations
Rationale: §62.1-44.19:13 of the Code of Virginia defines how annual nutrient loads are to be calculated; this is carried forward in 9 VAC 25-820-70. As annual concentrations (as opposed to loads) are limited in the individual permit, this special condition is intended to reconcile the reporting calculations between the permit programs, as the permittee is collecting a single set of samples for the purpose of ascertaining compliance with two permits.

Part I.C.15: Suspension of Concentration Limits for E3/E4 Facilities
Rationale: 9 VAC 25-40-70 B authorizes DEQ to approve an alternate compliance method to the technology-based effluent concentration limitations as required by subsection A of this section. Such alternate compliance method shall be incorporated into the permit of an Exemplary Environmental Enterprise (E3) facility or an Extraordinary Environmental Enterprise (E4) facility to allow the suspension of applicable technology based effluent concentration limitations during the period the E3 or E4 facility has a fully implemented environmental management system that includes operation of installed nutrient removal technologies at the treatment efficiency levels for which they were designed.

Part I.C.16: Offset Requirement
Rationale: The Virginia General Assembly, in its 2005 session, enacted a new Article 4.02 (Chesapeake Bay Watershed Nutrient Credit Exchange Program) to the Code of Virginia to address nutrient loads to the Bay. Section 62.1-44.19:15 sets forth the requirements for new and expanded dischargers, including the requirement that non-point load reductions acquired for the purpose of offsetting nutrient discharges be enforced through the individual VPDES permit.

Part I.C.17: Water Quality Criteria Monitoring
Rationale: State Water Control Law §62.1-44.21 authorizes the Board to request information needed to determine the discharge's impact on State waters. To ensure that water quality standards are maintained, the permittee is required to analyze the facility's effluent for the substances noted.

Part II, Conditions Applicable to All Permits
Rationale: VPDES Permit Regulation, 9 VAC 25-31-190 requires all VPDES permits to contain or specifically cite the conditions listed.

21. Changes to Permit:

Changes to Permit Cover Page: The permit cover page was updated to include the permit modification date.

Part I.A.1: Limitation and monitoring changes applied to the existing (0.06 MGD) facility - Formatting changes were made to the Part I.A section of the permit to distinguish the two sets of limitations and monitoring requirements by their respective effective periods. The current limitations and monitoring requirements for the 0.060 MGD facility appear under Part I.A.1, while the future limitations and monitoring requirements to become effective following issuance of a CTO for the 0.099 MGD facility appear under Part I.A.5.

Parameter	Effluent Limits		Monitoring Requirement		Reason
	From	To	From	To	
Total Residual Chlorine (TRC)	No Change	No Change	No Change	No Change	Requirements have been moved from Part I.A.1 to Part I.B.1 per GM14-2003, as chlorine limitations and monitoring requirements are now only applicable when chlorine is used for disinfection. (UV disinfection system is now used as the facility's primary disinfection

					method.)
E. coli	No Change	No Change	4/Month; Grab (10am-4pm)	2/Week; Grab (10am-4pm)	Installation of UV disinfection system as primary bacteria treatment method. Recommended sampling schedule for *0.0401-0.1 MGD* Municipal facilities treating bacteria with alternate disinfection per GM14-2003.

Part I.A.1: Footnote changes applied to the existing (0.06 MGD) facility:

Footnotes		**Change**	**Reason**
Previous	**Current**		
c	c	Language modified	To clarify that additional chlorine (TRC) limitations and monitoring requirements shall apply (per Part I.B.1) if chlorine is used for disinfection.
f	--	Deleted	No longer applicable due to change in *E. coli* monitoring frequency.
--	f	Added	Footnote included to clarify that the facility has associated total nitrogen and total phosphorous load limitations under the General VPDES Watershed Permit Regulation for Total Nitrogen and Total Phosphorus Discharges and Nutrient Trading in the Chesapeake Watershed in Virginia, as recommended per GM07-2008.

Part I.A.1: Other changes applied to the existing (0.06 MGD) facility:

From	**To**	**Change**	**Reason**
I.A.1	I.A.1	Specified that the effluent limitations and monitoring requirements are effective until the issuance of a CTO for the 0.099 MGD facility or until permit expiration, whichever occurs first.	To accommodate the proposed expansion.
I.A.4	I.A.4	BOD_5 changed to $cBOD_5$	Per PRO Staff Decisions 2/5/2015; 40CFR133.102 requires 85% removal of $\underline{cBOD_5}$ when $cBOD_5$ is limited and monitored in lieu of BOD_5.

Part I.A.5: Changes applied to the proposed (0.099 MGD) facility:

Parameter	Effluent Limits		Monitoring Requirement		Reason
	From	To	From	To	
$cBOD_5$	(No changes to concentration limits); 2,300 g/d (Monthly Avg); 3,400 g/d (Weekly Avg.)	(No changes to concentration limits); 3,700 g/d (Monthly Avg); 5,600 g/day (Weekly Avg.)	No change	No change	Increased loading due to expansion from 0.060 MGD to 0.099 MGD (see **Attachment 3** for $cBOD_5$ loading calculations).
Total Suspended Solids (TSS)	(No changes to concentration limits); 2,300 g/d (Monthly Avg); 3,400 g/d (Weekly Avg.)	(No changes to concentration limits); 3,700 g/d (Monthly Avg); 5,600 g/day (Weekly Avg.)	No change	No change	Increased loading due to flow expansion from 0.060 MGD to 0.099 MGD (see **Attachment 3** for TSS loading calculations).
Total Kjeldahl Nitrogen (TKN) (as N)	(No changes to concentration limits); 680 g/d (Monthly Avg.); 1,000 g/d (Weekly Avg.)	(No changes to concentration limits); 1,100 g/d (Monthly Avg.); 1,700 g/d (Weekly Avg.)	No change	No change	Increased loading due to expansion from 0.060 MGD to 0.099 MGD (see **Attachment 3** for TKN loading calculations).
Total Residual Chlorine (TRC)	No Change	No Change	No Change	No Change	Not included in Part I.A.5; addressed in Part I.B.2 per GM14-2003, as chlorine limitations and monitoring requirements are now only applicable when chlorine is used for disinfection. (UV disinfection system is now used as the facility's primary disinfection method.)
Ammonia (as N)	No change	No change	1/Month; Grab	1/Week; 4HC	Increased monitoring and changed sample type to 4 hour composite (4HC) per GM14-2003 Section MN-2 #4 Sampling Schedule Table.
E. coli	--	Added: 126 N/100 mL (Geometric Mean)	--	Added: 2/Week; Grab (10am-4pm)	Recommended sampling schedule for *0.0401-0.1 MGD* Municipal facilities that treat bacteria using alternate disinfection methods per GM14-2003.
Total Nitrogen, Calendar Year	--	Added: 8.0 mg/L	--	Added: 1/Year	9 VAC 25-40-70A authorizes DEQ to

Average (792)					include technology-based annual concentration limits in the permits of facilities that have installed nutrient control equipment; implemented per GM07-2008 Amendment 2.
Total Phosphorus, Calendar Year Average (794)	--	Added: 1.0 mg/L	--	Added: 1/Year	9 VAC 25-40-70A authorizes DEQ to include technology-based annual concentration limits in the permits of facilities that have installed nutrient control equipment; implemented per GM07-2008 Amendment 2.
Total Nitrogen, Year-to-Date	--	Added: NL	--	Added: 1/Month	9 VAC 25-820-10 et seq.; implemented per GM07-2008 Amendment 2.
Total Phosphorus, Year-to-Date	--	Added: NL	--	Added: 1/Month	9 VAC 25-820-10 et seq.; implemented per GM 07-2008 Amendment 2.

Part I.A.5: Footnote changes applied to the proposed (0.099 MGD) facility

Footnotes		**Change**	**Reason**
Previous	**Current**		
c	c	Language modified	To clarify that additional chlorine (TRC) limitations and monitoring requirements shall apply (per Part I.B.1) if chlorine is used for disinfection.
f	**--**	Deleted	No longer applicable due to change in *E. coli* monitoring frequency.
--	e	Added	Footnote included to clarify that the facility has associated total nitrogen and total phosphorous load limitations under the General VPDES Watershed Permit Regulation for Total Nitrogen and Total Phosphorus Discharges and Nutrient Trading in the Chesapeake Watershed in Virginia per GM07-2008.

--	f	Added	Per GM07-2008.
--	g	Added	Per GM07-2008.
--	h	Added	To clarify that the concentration limitation is expressed to three significant figures.
--	i.	Added	To provide the effective dates for the TN and TP concentration limits.

Part I.A.5: Other changes applied to the proposed (0.099 MGD) facility:			
From	**To**	**Change**	**Reason**
--	I.A.5	Added language; Specified that the effluent limitations and monitoring requirements become effective upon the issuance of the CTO for the 0.099 MGD facility.	Added per GM07-2008.
I.A.8	I.A.8	BOD_5 changed to $cBOD_5$	Per PRO Staff Decisions 2/5/2015; 40CFR133.102 requires 85% removal of $\underline{cBOD_5}$ when $cBOD_5$ is limited and monitored in lieu of BOD_5.

Changes to Part I.B: Additional Chlorine Limitations and Monitoring Requirements:			
From	**To**	**Change**	**Reason**
I.B.1	I.B.1	Modified language	To clarify that the TRC limitations and monitoring requirements in Part I.B.1(a - e) apply if chlorine is used for disinfection per GM14-2003.
--	I.B.1(e)	Added language and limitations and monitoring requirements table	To specify that effluent TRC must be limited and monitored, following dechlorination as specified in the Part I.B.1(e) table per GM14-2003.
I.B.2	--	Deleted	No longer necessary, as Part I.A.1 (existing 0.060 MGD facility) and I.A.5 (proposed 0.099 MGD facility) include these limitations and monitoring requirements for *E. coli*.

Changes to Part I Special Conditions:				
From	**To**	**Special Condition Changed**	**Change:**	**Reason**

I.C.3	I.C.3	CTC & CTO Requirements	Language revised for clarity.	GM14-003
I.C.4	I.C.4	O&M Manual Requirements	Updated	GM14-2003
I.C.5	I.C.5	Licensed Operator Requirement	Updated the Board Name	
I.C.6	I.C.6	Reliability Class	Added language requiring that the proposed 0.099 MGD treatment works shall meet Reliability Class I.	Reliability Class I is appropriate for the 0.099 MGD treatment works as per 9VAC25-790-70: "Sewerage systems or treatment works whose location, or discharge, or potential discharge (i) is sufficiently close to residences, public water supply, shellfish, or recreation waters; (ii) has a volume or character; or (iii) for which minimal dilution of 10 to 1, receiving water volume to discharge volume, based on permit flow values is not provided year round, such that permanent or unacceptable damage could occur to the receiving waters or public health and welfare if normal operations were interrupted."
I.C.10(a)	I.C.10(a)	Compliance Reporting	QL for cBOD5 was updated (from 5.0 mg/L to 2 mg/L).	$cBOD_5$ QL is now 2 mg/L per GM14-2003.
I.C.10(b)	I.C.10(b)	Compliance Reporting	Language updated.	To clarify reporting requirements for reporting periods encompassing multiple months.
--	I.C.10(e)	Compliance Reporting	Language added to specify that Part I.C.10(b) only applies to parameters not addressed in Part I.C.14 Nutrient Reporting Calculations.	Part (e) was added in accordance with DEQ PRO convention and staff decisions as of June 29, 2010.
--	I.C.14	Nutrient Reporting Requirements	Added	Nutrient Reporting Calculations added per GM 07-2008 Amendment 2.
--	I.C.15	Suspension of Concentration Limits for E3/E4 Facilities	Added	GM 07-2008 Amendment 2.

--	I.C.16	Offset Requirement	Added	GM 07-2008 Amendment 2.
--	I.C.17	Water Quality Criteria Monitoring	Added	Major modifications and expansion of treatment works necessitate re-characterization of the effluent via Attachment A Water Quality Criteria Monitoring submittal, per GM14-2003.

Changes to Part II Conditions Applicable to All VPDES Permits:			
From	**To**	**Condition Changed**	**Reason for Change**
-	II.A.4	Monitoring	Updated language per GM14-2003.
II.B.2	II.B.2	Records	Updated language per GM14-2003.
II.C.3	-	Reporting Monitoring Results (#3)	Part II.C.3 language removed per GM14-2003.
II.C.4	II.C.3	Reporting Monitoring Results (#4)	Part II.C.4 becomes Part II.C.3 (numerically) due to removal of previous Part II.C.3.
II.I.3	II.I.3	Reports of Noncompliance	Revised to reflect new reporting protocol adopted by PRO effective January 8, 2014.

22. Variances/Alternate Limits or Conditions: None

23. Regulation of Users: 9 VAC 25-31-280 B 9: Not applicable, this facility is a POTW.

24. Public Notice Information required by 9 VAC 25-31-280 B:

Comment period: 4/1/2015 to 5/1/2015
Date of first publishing: 4/1/2015
Date of second publishing: 4/8/2015
Publishing Newspaper: *Sussex-Surry Dispatch*

All pertinent information is on file and may be inspected or copied by contacting Adam Eller at:

Virginia Department of Environmental Quality (DEQ)
Piedmont Regional Office
4949-A Cox Road
Glen Allen, Virginia 23060-6296

Telephone Number 804/527-5046
Facsimile Number 804/527-5106

Email adam.eller@deq.virginia.gov

HOW TO COMMENT AND/OR REQUEST A PUBLIC HEARING:
Persons may comment in writing or by email to the DEQ on the proposed permit action, and may request a public hearing, during the comment period. Comments shall include the name, address, and telephone number of the writer and of all persons represented by the commenter/requester, and shall contain a complete, concise statement of the factual basis for comments. Only those comments received within this period will be considered. The DEQ may decide to hold a public hearing, including another comment period, if public response is significant and there are substantial, disputed issues relevant to the permit. Requests for public hearings shall state 1) the reason why a hearing is requested; 2) a brief, informal statement regarding the nature and extent of the interest of the requester or of those represented by the requester, including how and to what extent such interest would be directly and adversely affected by the permit; and 3) specific references, where possible, to terms and conditions of the permit with suggested revisions. Following the comment period, the Board will make a determination regarding the proposed permit action. This determination will become effective, unless the DEQ grants a public hearing. Due notice of any public hearing will be given. The public may review the draft permit and application at the DEQ Piedmont Regional Office by appointment.

Public Notice Comments: One individual commented during the Public Comment Period (see **Attachment 12** for the Response to Comments Memorandum). No changes to the draft were proposed during the Public Comment Period. No requests for a public hearing were received. No changes to the provisions of the draft were made as a result of the comments that were received.

25. Additional Comments:

Previous Board Action:

Effective June 25, 2010 the Town of Surry entered into a Consent Order with DEQ in order to reconcile violations of TKN, $cBOD_5$, copper, and chlorine effluent limitations as well as reporting violations. This permit modification action is consistent with Appendix A No. 2 of the Order, which required the permittee to submit a permit application for a flow expansion and include a schedule of implementation and funding plan. The Order also required the Town of Surry to raise sewer rates, identify and complete Inflow and Infiltration (I&I) work on the Plant's collection system, and to complete a corrective action plan at the Plant to meet VPDES Permit effluent limits. The Town increased sewer rates, completed I&I work on the collection system, installed a UV disinfection system, and submitted a PER for the expansion to a 0.099 MGD facility. The Town plans to install the upgraded/expanded 0.099 MGD facility in order to address the previously mentioned effluent limitations violations.

The Order shall continue until Surry petitions the Director to terminate the Order after it has completed all of the requirements and the termination is approved or the Director or State Water Control Board terminate the order upon 30 days written notice to Surry.

See **Attachment H** of the 2011 Fact Sheet for the Order by Consent (effective June 25, 2010) and **Attachment 6** for the Amendment to Order by Consent (effective October 3, 2013).

Planning Statement:

This discharge is in conformance with the existing planning documents for the area (PRO, 2/27/2015).

Staff Comments:

a. All permit fees are up to date. The permit modification fee was paid on March 24, 2014. The permit maintenance fee was paid on September 4, 2014. The application fee for the General VPDES Watershed Permit was paid on October 6, 2014.

b. Local government and riparian landowners were notified of the proposed permit modification (on May 20, 2014 and May 29, 2014 respectively), in accordance with Section 62.1-44.15:4 of the Code of Virginia. See **Attachment 8** for Local Riparian Landowner Notifications; see **Attachment 9** for Local Government Notification; see **Attachment 10** for Local Government Ordinance Form.

c. Local governments were notified of the public comment period on March 25, 2015. In accordance with the Code of Virginia, §62.1-44.15:01, the following individuals received the notification: Will M. Gwaltney, Mayor of the Town of Surry; Tyrone W. Franklin, Surry County Administrator; and to Mark Bittner (via Dennis Morris), Director of Planning and Information Technology at the Crater Planning District Commission (CPDC).

d. In an email sent on March 26, 2015, the Crater Planning District Commission stated that: "Based upon the Crater Commission's staff review, we find the proposal to be in full accord with the Crater Planning District Commission's environmental policy directives and we support the request." (See **Attachment 11**.)

e. The Virginia Marine Resources Commission (VMRC) did not comment on or object to the proposed modification to the permit.

f. State and Federal agencies (including EPA, DGIF, VIMS, F&WS, NMFS, Corps of Engineers, and adjacent states) were notified of the public notice via DEQ's Mailing List; however, no comments or objections to the permit modification were received.

g. The facility is not a member of the Virginia Environmental Excellence Program (VEEP).

h. The permittee has been an e-DMR participant since September 29, 2011.

i. The facility registered for coverage under 9 VAC 25-820-10 *et seq.* General VPDES Watershed Permit Regulation for Total Nitrogen and Total Phosphorus Discharges and Nutrient Trading in the Chesapeake Bay Watershed in Virginia on October 6, 2014. The facility discharges into the Chesapeake Bay Watershed, is considered a non-significant discharger as defined in 9 VAC 25-820-10. Non-significant discharges with individual permits in existence as of July 1, 2005 are covered by rule under the Watershed General Permit (9 VAC 25-820-10 et seq.). The facility is located downstream of the fall line and has a design capacity of less than 0.1 million gallons per day. New or expanding non-significant dischargers that trigger the offset requirements established under the Code of Virginia are required to register and will be assigned individual allocations based on permitted design capacity or offsets upon issuance of a CTO for the expansion. The facility is an expanding non-significant discharger; see Item 26 for further discussion.

Other Agency Comments:

a. VDH Office of Drinking Water- Letter dated June 27, 2014 stated that:

"There are no public water supply raw water intakes located within 15 miles downstream or within one tidal cycle upstream of the existing project." The VDH Office of Drinking Water raised no objection to the permit modification.

b. VDH Division of Shellfish Sanitation – Letter dated September 2, 2014 stated that: "The project is located in or adjacent to condemned shellfish growing waters and the activity, as described, will not cause an increase in the size or type of the existing closure." The VDH Division of Shellfish Sanitation raised no objection to the permit modification.

26. 303(d) Listed Segments (TMDL):

During the 2012 305(b)/303(d) Water Quality Assessment report, the unnamed tributary was assessed as a Category 2B water ("Waters are of concern to the state but no Water Quality Standard exists for a specific pollutant, or the water exceeds a state screening value or toxicity test."). The Fish Consumption Use is fully supporting with observed effects due to a VDH fish consumption advisory for kepone. The other Designated Uses were not assessed.

The Town of Surry WWTF was addressed in the Chesapeake Bay TMDL, which was approved by the EPA on December 29, 2010. The TMDL allocates loads for total nitrogen (TN), total phosphorus (TP), and total suspended solids (TSS) to protect the dissolved oxygen and submerged aquatic vegetation acreage criteria in the Chesapeake Bay and its tidal tributaries. Per DEQ's Phase I Watershed Implementation Plan (WIP) for the Chesapeake Bay TMDL (implemented on November 29, 2010), the non-significant TN and TP loads are considered aggregate and are not to be included in individual VPDES permits. The aggregated TN and TP loads are regulated by the Watershed Nutrient General Permit and all non-significant discharges with individual permits in existence as of July 1, 2005 are covered by rule under the permit (9 VAC 25-820-10 et seq.). The discharge from the existing 0.60 MGD facility is included in the aforementioned aggregated loads for non-significant wastewater dischargers in the Oligohaline James River Estuary (JMSOH); however, new or expanding non-significant dischargers that trigger the offset requirements established under the Code of Virginia are required to register and will be assigned individual allocations based on permitted design capacity or offsets upon issuance of a CTO for the expansion. The Town of Surry WWTF's application for the expansion in permitted design capacity to 0.099 MGD necessitated registration for coverage under the Watershed Nutrient General Permit. This modified VPDES Individual Permit includes concentration limitations for TN and TP for the 0.099 MGD facility; this facility also has TN and TP calendar year load limits included in the current Registration List under registration number VAN040172, enforceable under the General VPDES Watershed Permit Regulation for Total Nitrogen and Total Phosphorus Discharges and Nutrient Trading in the Chesapeake Watershed in Virginia. The TSS allocations are considered aggregated and facilities with technology-based TSS limits are considered to be in conformance with the TMDL (this permit includes TSS limitations based on the 1988 Stream Sanitation Memorandum and on Best Engineering Judgment; these existing TSS limitations are more stringent than the technology-based standards for secondary treatment and are therefore in conformance with the TMDL). TSS limitations are included in this permit for both the existing 0.060 MGD treatment works, as well as the proposed 0.099 MGD treatment works. Per the WIP, provided the aggregated loads for all discharges is less than the aggregate TSS load in the WIP and the individual permits contain technology-based TSS limits as necessary, the individual VPDES permits will be considered to be consistent with the TMDL. The facility will neither cause nor contribute to violations of the Water Quality Standards (9 VAC 25-260 et seq., effective 1/6/11).

27. Attachments:

Attachment 1:	Proposed Treatment Works Modifications (Expansion to 0.099 MGD) and Nutrient Offset Plan (provided by permittee)
Attachment 2:	Stream Sanitation Analysis Memorandum (2014) and Flow Frequency Memorandum (2014)
Attachment 3:	Effluent Limitation Development for 0.099 MGD Facility (Includes MSTRANTI Data Source Report, DMR data, MSTRANTI wasteload allocations, Stats.exe analysis, and cBOD5, TSS & TKN loading calculations)
Attachment 4:	Preliminary Engineering Report (PER) Approval Letter
Attachment 5:	Certificate to Operate (Ultraviolet Light Disinfection System)
Attachment 6:	Amendment to Order by Consent (effective October 3, 2013)
Attachment 7:	VDH Coordination (ODW & DSS)
Attachment 8:	Local Riparian Landowners Notifications
Attachment 9:	Local Government Notifications
Attachment 10:	Local Government Ordinance Form
Attachment 11:	Crater District Planning Commission Response
Attachment 12:	Response to Comments Memorandum